REMARKS

By this amendment, applicants has amended the specification to insert appropriate headings therein, to correct the spelling of "calender" and "calendering" and to delete reference numeral "9" on page 2, line 22. Applicant has amended the claims to more clearly define his invention. In particular, the claims have been amended to eliminate the informalities noted in section 5 of the office action and the alleged indefinite expressions noted in numbered sections 7 - 16 of the office action. Applicant has also amended the claims to indicate that the nonwoven material is being transferred from a pressing roller pair traversed only by the nonwoven material to a second transport device, e.g., a following adjacent roller, e.g., a following adjacent roller encircled by an endless conveyor. See, e.g., Figures 1 - 3. Applicant has added claims 14 - 18 to define further aspects of the present invention. Support for the foregoing amendments can be found in Figures 1 - 3 and page 2, lines 9 - 24 of applicants' specification. Support for newly added claims 16 - 18 can be found, specifically, at page 2, lines 13 - 16 of applicant's specification.

The Examiner alleges the declaration to be defective for not identifying the invention, the Examiner alleging the title on the declaration to not be the same as in the specification. However, there are various combinations of information in an oath or declaration filed after the filing date of the application which are acceptable as minimums for identifying the specification and comply with the identification requirement of 37 CFR 1.63. Manual of Patent Examining Procedure, (MPEP) 602. As noted in section 602 of the MPEP, some of these combinations include the title of the invention which was on the specification as filed. However, one proper identification consists of

merely the application number, i.e., the series code and serial number, while another proper identification consists of the serial number and filing date. Since both the application number as well as the serial number and filing date were on the declaration filed March 19, 2002, the declaration complied with the identification requirement of 37 CFR 1.63, regardless of whether the title was the same as that on the specification as filed. Therefore, the declaration is not defective.

The Examiner has indicated in numbered section 3 of the office action that the listing of references in the specification is not a proper information disclosure statement. Under separate cover, applicant is submitting herewith a proper information disclosure statement including documents cited in the European Search Report, as well as the documents cited in applicant's specification. Consideration of these documents is requested.

The Examiner has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) for not including the reference numeral 9 mentioned on page 2, line 22 of the specification. In response to this objection, applicant has amended page 2, line 22 to delete reference numeral 9. Accordingly, reconsideration and withdrawal of the objection to the drawings are requested.

In view of the foregoing amendments to the claims, reconsideration and withdrawal of the objection to claims 8, 9 and 11 in numbered section 5 of the office action and the rejection of claims 2 - 13 under 35 USC 112, second paragraph, in numbered sections 6 - 16 of the office action are requested.

Claims 1 - 6 stand rejected under 35 USC 102(b) as allegedly being anticipated by United States Patent No. 5,614,303 Baigas, Jr. Applicant traverses this rejection and

requests reconsideration thereof.

The present invention relates to a method and device for transporting a thin nonwoven material from a pressing roller pair traversed only by the non-woven material to a second transport device, e.g., a following adjacent roller, e.g., a following adjacent roller encircled by an endless conveyor. As shown, for example, in Figure 1 of the subject application, a thin non-woven material is produced by, e.g., a carding machine 1-4. The carded nonwoven material is delivered to a calendering unit 5 which may comprise a simple roller pair. The bonding effect at the calendering unit 5 is typically small so as to allow fiber pulp delivered in a subsequent step to undergo a more intimate bonding with the carded nonwoven material. After the calendering unit 5, a further transport device, e.g., an endless conveyor 17 is provided. A problematic area is the delivery of the carded nonwoven material 21 from the calender 5 to the endless conveyor 17. See, e.g., the paragraph bridging pages 2 and 3 of applicant's specification.

The present invention solves the problems associated with the delivery of the non-woven material from the calender roller pair 5 to the subsequent transport device 17. According to the present invention, the nonwoven material coming from the pressing roller, e.g., the calender roller pair, is seized by a partial vacuum which acts against an endless circulating transport element from a non-transporting side. The nonwoven is then held by this partial vacuum on the endless circulating transport element during the transfer as well as during delivery to the second transport device. Two embodiments of the endless circulating transport element are shown in Figures 1 and 2.

The patent to Baigas, Jr. discloses a laminated fabric product and methods of making the product. The Examiner refers to Figure 5 of Baigas, Jr. which discloses a curing apparatus 60 through which the batt 61 is passed between two porous, parallel compression conveyors 62, 63 having heated air blowing downward through the moving batt produced by blower 64a, 64b. After the curing process is complete, but while the batt is still under compression, the batt 61 is preferably cooled in a cooling chamber 65 fueled by blowing air from fan 66 and then rolled for storage. The curing apparatus of Baigas, Jr., relates to a different aspect of nonwoven processing than does the present invention. The present invention provides a method and device for transporting or delivering a thin nonwoven material from a pressing roller pair to a second transport device, e.g., a following adjacent roller, e.g., a following adjacent roller encircled by an endless conveyor. The Baigas, Jr. patent does not disclose the presently claimed invention, including the use of a partial vacuum which acts against an endless circulating transport element to deliver a thin nonwoven material from a pressing roller pair to a second transport device, as presently claimed. Accordingly, the Baigas, Jr. patent does not anticipate the presently claimed invention.

Claims 1 - 7 stand rejected under 35 USC 102(b) as allegedly being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over United States Patent No. 5,915,613 to Meschenmoser. Claims 1 - 6 and 10 also stand rejected under 35 USC 102(b) as allegedly being anticipated or, in the alternative, under 35 USC 103(a) as obvious over Meschenmoser. Applicant traverses these rejections and requests reconsideration theroef.

In Meschenmoser, the fiberous web 3 is guided via a transport belt or welt felt 7

through a roller nip formed by pressed cylinder 5 in a linked second pressed cylinder 9. In contrast, according to the present invention, the pressing roller pair is traversed only by the nonwoven material, i.e., the present invention does not use a transport belt or wet felt as in Meschenmoser. Accordingly, the problem to be solved by the present invention is different than that is Meschenmoser. Accordingly, it is submitted the Meschenmoser patent does not disclose and would not have suggested the presently claimed invention.

Claims 1, 2, 5 and 7 stand rejected under 35 USC 102(e) as allegedly being anticipated by United States Patent No. 6,050,469 to Brabant et al. Applicant traverses this rejection and requests reconsideration thereof.

The Brabant et al patent discloses a fiber web transferring device for transferring a non-consolidated fiber web from a conveyor belt to a lower calendering cylinder. Thus, the Brabant et al patent relates to a different aspect of nonwoven processing. Quite the opposite of Brabant et al, the present invention relates to a method and device for delivering a nonwoven from a pressing roller pair to a second transport device. Thus, the Brabant et al patent does not anticipate the presently claimed invention.

Applicant notes the indication of allowable subject matter in claims 8, 9 and 11 - 13. However, in view of the foregoing amendments and remarks, it is submitted all of the claims now in the application are in condition for allowance.

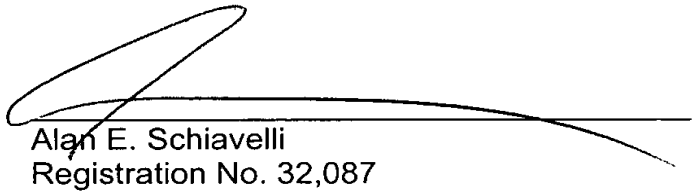
Applicant notes the Examiner has cited a number of documents as being pertinent to applicant's disclosure. However, since these documents were not applied in rejecting claims formerly in the application, further discussion of these documents is deemed unnecessary.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 865.41078X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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Attachments

VERSION WITH MARKINGS TO SHOW CHANGES

IN THE SPECIFICATION:

Page 1, amend the paragraph beginning on line 1 to read as follows:

BACKGROUND OF THE INVENTION

German Patent application DE-A-I00 08746 describes a continuous system in which the nonwoven staple fiber material produced on a carding machine runs through a ~~calendar~~ calender and then to an endless conveyor for further processing on which the carded nonwoven material is provided with a pulp coating and subsequently undergoes hydrodynamic needling. The nonwoven material must be cooled after calendering~~calendaring~~, and to achieve this a pair of cooling rollers not referred to in the application must then be inserted between the ~~calendar~~ calender and the endless conveyor. In the event the nonwoven material is not bonded by the ~~calendar~~ calender roller pair, that is, in the event the ~~calendar~~ calender is traversed in the open state in the continuous system by the nonwoven material, the nonwoven staple fiber material is not strong enough to pass through the cooling roller pair or to the following endless conveyor without an effective support for its surface.

Page 1, amend the paragraph beginning on line 12 to read as follows:

SUMMARY OF THE INVENTION

The goal of the invention is to develop a method and associated device by which a nonbonded, or light, nonwoven staple fiber material may be continuously and easily

transported from the roller nip of the ~~calendar~~ calender roller pair to the continuing endless conveyor.

Page 2, amend the paragraph beginning on line 6 to read as follows:

Figure 2 shows an enlarged view of the delivery section from the ~~calendar~~ calender to the following endless conveyor, and

Page 2, amend the paragraph beginning on line 9 to read as follows:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As a first step, the nonwoven support material is produced from polyester fibers and/or polypropylene fibers or the like. A carding machine 1-4 functions here as the nonwoven material laying device. The carding machine includes a hopper feeder 1 with an oscillating chute 2 located under it which delivers the fibers of the carding machine, which have been uniformly distributed in a lateral dimension, by raising and toothed rollers 3. The following endless conveyor 4 delivers the laid carded nonwoven material to a ~~calendaring~~ calendering unit 5 which here consists of a simple roller pair. The bonding effect should only be small here so as to then allow the pulp to undergo a more intimate bonding with the carded nonwoven material.

Page 2, amend the paragraph beginning on line 17 to read as follows:

After this processing step, the fiber pulp is fed in the familiar fashion, for example, using a device 6 as described in European Patent Application EP-A-0 032 772. In

the continuous system, an endless conveyor 17 is provided for this purpose which follows ~~calendar~~ calender roller pair 5. Both nonwoven layers together are bonded by undergoing hydrodynamic needling 7 which may be performed on the same endless conveyor 17. The next step is the drying process which occurs on a perforated drum unit ~~8, 9~~ 8 by through-air ventilation. In the device 6, the fan is located directly on the front side of the perforated drums. The final step is additional ~~calendaring~~ calendering by roller pair 15, 16 but now at a higher energy level.

Page 2, amend the paragraph beginning on line 25 to read as follows:

A problematic area is the delivery of carded nonwoven material 21 from ~~calendar~~ calender 5 to endless conveyor 17. After calendering~~calendaring~~, the nonwoven material 21 exhibits a certain strength which allows it to be transported into a cooling roller pair. However, ~~calendaring~~ calendering may not always be desirable, or the strength may be insufficient even with calendering~~calendaring~~. A remedy for this problem is shown in Figure 2 where provision is made for delivering the nonwoven material 21 using an additional endless conveyor 18, or in Figure 3 where a perforated drum 19 is provided with suction. Both of these solutions have the advantage that the otherwise necessary cooling roller pair can be eliminated.

Page 3, amend the paragraph beginning on line 6 to read as follows:

In Figure 2, endless delivery conveyor 18 is located above endless conveyor 17, the first deflection roller 20 of said conveyor 18 being engaged at the level of the nip between ~~calendar~~ calender rollers 5. This arrangement results in the nonwoven material 21 being in contact longer with the lower roller of ~~calendar~~ calender 5 but

this is not disadvantageous. The return side of endless delivery roller 18 then continues horizontally and extends thus to running-off roller 22 which may be followed by a suction device 23 located below endless conveyor 17. Between deflection roller 20 and running-off roller 22, there is located a suction box 24 above the return side which pulls nonwoven material 21 against endless conveyor 18, thereby easily advancing the nonwoven material to endless conveyor 17. Nonwoven material 21 may be simultaneously permeated by cooling air 25 and be cooled after completion of calenderingcalendaring.

Page 3, amend the paragraph beginning on line 16 to read as follows:

In the device shown in Figure 3, endless conveyor 18 is replaced by a perforated drum 19 which is subject to suction. Perforated drum 19 is arranged such that it transfers nonwoven material 21 in a meander-shaped track guider and then delivers it to endless conveyor 17. To achieve this, perforated drum 19 at its axis is located approximately at the level of the roller pair of calendar calender 5. Suction draft 26 ensures easy transport and delivery of nonwoven material 21 to endless conveyor 17. To achieve this, an inner cover 27 is provided which extends more than 180°, beginning at the delivery line of the nonwoven material to the perforated drum and ending at the first deflection roller 28 of endless conveyor 17.

IN THE CLAIMS:

1. (Amended) Method for transporting a thin nonwoven material such as a nonwoven staple fiber material from one a pressing roller pair traversed only the nonwoven material to a second transport device, characterized in that the nonwoven

material is seized by ~~air pressure, such as~~ a partial vacuum~~,~~ which acts against ~~a~~ an endless circulating transport element and is held by this partial vacuum on the endless circulating transport element during the transfer as well as during delivery.

3. (Amended) Method according to Claim 1, characterized in that, during delivery, the nonwoven material is simultaneously processed and cooled at ~~the~~ an intrinsic temperature of the nonwoven material.

5. (Amended) Device for delivering a thin, unbonded nonwoven material ~~such as a nonwoven staple fiber material~~ from ~~one~~ a pressing roller pair traversed only by the nonwoven material to a following adjacent roller ~~which may be encircled by an endless conveyor~~ for further transport, characterized in that the device includes an endless circulating transport element ~~(18, 19)~~ against which a partial vacuum ~~(25, 26)~~ acts from ~~the~~ a non-transporting side.

6. (Amended) Device according to Claim 5, characterized in that the transport element is designed as an endless conveyor ~~(18)~~ with an associated suction device ~~(24)~~.

7. (Amended) Device according to Claim 5, characterized in that the transport element is designed as a perforated drum ~~(19)~~ subjected to a suction draft and supplied, as required, with cooling air ~~(26)~~.

8. (Amended) Device according to Claim ~~1 including~~ 5, characterized in that the pressing roller pair is a ~~calendar~~ calender roller pair ~~followed~~ and the adjacent

roller is encircled by ~~an~~ a following endless conveyor provided for further processing, ~~characterized~~ and in that ~~an additional~~the endless circulating transport element is a permeable endless delivery conveyor ~~(18)~~which extends above a track of the nonwoven ~~track, material~~ approximately from ~~the~~ a roller nip of the calender roller pair up to and beyond the following endless conveyor ~~(17), to which endless delivery conveyor is associated~~, the device further comprising a suction device ~~(24)~~ running parallel to the permeable endless delivery conveyor ~~(18)~~ and located above ~~the~~ a nontransport side thereof.

9. (Amended) Device according to Claim 8, characterized in that ~~the~~ a first deflection roller ~~(20)~~ of the ~~calendar roller nip for the~~ permeable endless delivery conveyor ~~(18)~~ is engaged in the nip between the ~~calendar~~ calender rollers such that ~~the~~ a lower ~~calendar~~ roller of the calender roller pair partially encircles the nonwoven material ~~(21)~~.

10. (Amended) Device according to Claim 5~~1~~, characterized in that a suction device ~~(23)~~ to receive the nonwoven material from the permeable endless delivery conveyor ~~(18)~~ is located at ~~the~~ an upper delivery site of the nonwoven material ~~(21)~~ extending from the permeable endless delivery conveyor ~~(18)~~ to the following endless conveyor ~~(17)~~ below said following endless conveyor.

11. (Amended) Device according to Claim ~~1 including a calendar~~ 5, characterized in that the pressing roller pair is a calender roller pair ~~followed~~ and the adjacent roller is encircled by ~~an~~ a following endless conveyor for further processing, ~~characterized~~ and in that the endless circulating transport device is a counter-

rotating perforated drum ~~(19) is~~ associated with ~~the~~ a lower roller of the ~~calendar~~ calender roller pair ~~(5)~~, in which drum a partial vacuum is generated.

12. (Amended) Device according to Claim 11, characterized in that cooling air in the form of ambient air ~~(26)~~ is fed to the perforated drum ~~(19)~~.

13. (Amended) Device according to Claim 12, characterized in that the ~~including a~~ perforated drum ~~with~~ includes an inner cover~~, characterized in that the inner cover (27)~~ on the top side of the perforated drum ~~(19) extends~~, the inner cover extending more than 180° and ~~ends~~ ending directly above ~~the~~ a delivery line at the ~~calendar~~ calender roller pair and directly above ~~the~~ a delivery line at the ~~first deflection~~ following adjacent roller ~~of the endless conveyor (17)~~.